

REMARKS

This Amendment is submitted in response to the Office Action mailed May 16, 2006, hereinafter "Office Action."

Claim Amendments

Claim 1 has been cancelled without prejudice.

Claims 2-4 and 6-10 have been amended to correct their dependency.

Claim 5 has been amended to incorporate the limitations of claim 1.

Support for this amendment is found throughout the specification and claims as filed, and in particular, in original claims 1 and 5, and in the specification such as on page 11, lines 28-33. No new matter is introduced by the amendment of claim 5.

Claims 20-23 have been cancelled without prejudice.

New claims 24-26 have been added.

New claim 24 depends from method claim 16 and incorporates limitations from original claim 5. Support for new claim 24 is found throughout the specification and claims as filed, and in particular, in original claims 5 and 16, and in the specification such as on page 11, lines 28-33. No new matter is introduced by new claim 24.

New claim 25 depends from method claim 16 and incorporates limitations from original claim 9. Support for new claim 25 is found throughout the specification and claims as filed, and in particular, in original claims 9 and 16, and in the specification such as on page 12, lines 1-6. No new matter is introduced by new claim 25.

New claim 26 depends from method claim 16 and incorporates limitations from original claim 10. Support for new claim 26 is found throughout the specification and claims as filed, and in particular, in original claims 10 and 16,

and in the specification such as on page 12, lines 17-27. No new matter is introduced by new claim 26.

Claim Rejections Under 35 U.S.C. §102(b)

Claims 1-4 and 7-10 stand rejected under 102(b) as being anticipated by Verduijn et al. (US 2002/0082460), hereinafter "Verduijn." The Office Action indicated that claims 5 and 6 contained allowable subject matter and would be in condition for allowance if rewritten in independent form. Applicants have so amended claim 5 and have amended claims 2-4 and 7-10 so that they depend from amended claim 5. As a result, claims 2-10 are believed to be in condition for allowance.

Reconsideration and withdrawal of the rejections based on 35 U.S.C. §102(b) is respectfully requested.

Claim Rejections Under 35 U.S.C. §103(a)

Claims 11-19 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Kulkarni et al. (US 6,508,860), hereinafter "Kulkarni", in view of Verduijn.

The Office Action indicates that Kulkarni discloses a mixed matrix membrane comprising particles of a treated molecular sieve dispersed in a continuous phase consisting essentially of a matrix polymer. While the Office acknowledges that Kulkarni does not disclose that the molecular sieve material is water washed as recited in Applicants' claims, it is asserted that it would have been obvious to one of skill in the art to have employed the zeolite of Verduijn in the method of Kulkarni because Kulkarni discloses employing silanated zeolites in membranes and Verduijn discloses silanated zeolites. Applicants respectfully disagree with this conclusion for the reasons that a coated zeolite catalyst such as taught in Verduijn is not suitable for use in the gas separation membrane applications of Kulkarni as would have been known to one of skill in the art.

Verduijn is directed to a coated zeolite catalyst having controlled external surface acidity and the use of the coated zeolite catalyst in hydrocarbon conversion processes. See Verduijn ¶0002. The zeolite catalyst is at least partially coated to reduce the number of reactive sites on the surface of the zeolite where non-selective reactions can occur. See Verduijn ¶0006. There is no teaching or suggestion in Verduijn that the coated zeolite catalyst is appropriate for use in gas separation applications.

As described in Kulkarni, gas permeable membranes used to separate components of gas mixtures can have an active gas separation layer that comprises a dispersed phase of discrete particles in a continuous phase of polymeric material. Kulkarni indicates that the gas separation mechanism is due to chemical compounds of suitable size selectively migrating through the pores of the discrete particles. Moreover the particles are selected to provide improved separation characteristics such as improvements in permeability and selectivity. See Kulkarni, col. 1, lines 15-37. There is no teaching or suggestion in Kulkarni that coated particles, or more specifically coated zeolites, would be suitable particles for use in the described gas separation membranes. One skilled in the art of gas separation membranes would not have been motivated by the teachings of Verduijn and/or Kulkarni to use a coated zeolite in a gas separation membrane as the presence of such a coating on the porous particle would be expected to inhibit, if not prevent, the migration of gas component(s) through the particle.

For the reasons stated above, one of skill in the art would not have been motivated by the teachings of these references to use the coated zeolite of Verduijn in a gas separation membrane of Kulkarni. Applicants respectfully request reconsideration and withdrawal of the rejection of claims 11-19 under 35 U.S.C. §103(a).

All of the stated grounds of objection and rejection are believed to have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicant believes that a full and complete response has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment is respectfully requested.

Respectfully submitted,



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